

## **EXHIBIT D**

## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
1. A method by a sending data processing system, the method comprising:	CiscoWave 2 Access Points are a “sending data processing system” that implements methods.
accessing, by the sending data processing system, identity information for describing an originator identity associated with the sending data processing system;	<p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:           <ul style="list-style-type: none"> <li>• UUID (16 bytes value, which can uniquely identify an organization)</li> <li>• Major number (2 bytes value, which can identify a unique store of the organization)</li> <li>• Minor number (2 bytes value, which can identify a particular product or section)</li> </ul> </li> </ul> <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p> <p><i>The UUID constitutes the “identity information for describing an originator identity associated with the sending data processing system”.</i></p>

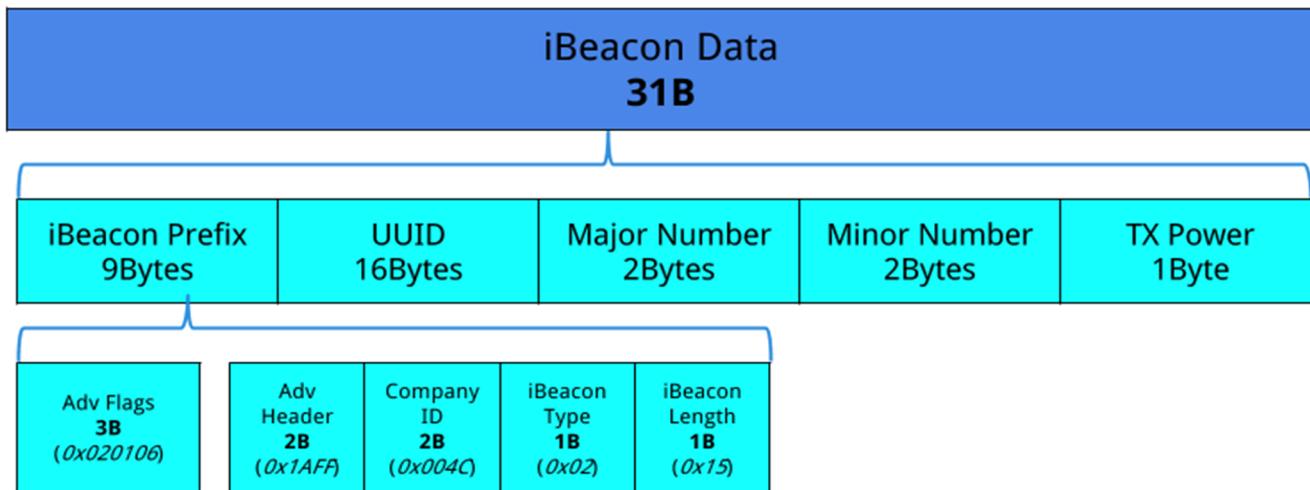
## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
<p>accessing, by the sending data processing system, application information for an application in use at the sending data processing system;</p>	<p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data: <ul style="list-style-type: none"> <li>• UUID (16 bytes value, which can uniquely identify an organization)</li> <li>• Major number (2 bytes value, which can identify a unique store of the organization)</li> <li>• Minor number (2 bytes value, which can identify a particular product or section)</li> </ul> </li> </ul> <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p> <pre> graph TD     IB[31B] --&gt; IP[iBeacon Prefix 9Bytes]     IB --&gt; UUID[UUID 16Bytes]     IB --&gt; MN[Major Number 2Bytes]     IB --&gt; MN[Minor Number 2Bytes]     IB --&gt; TXP[TX Power 1Byte]     IP --&gt; AF[Adv Flags 3B (0x020106)]     AF --&gt; AH[Adv Header 2B (0x1AFF)]     AF --&gt; CID[Company ID 2B (0x004C)]     AF --&gt; IT[iBeacon Type 1B (0x02)]     AF --&gt; IL[iBeacon Length 1B (0x15)] </pre> <p><a href="https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/">https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</a></p> <p><i>The iBeacon Prefix constitutes the “application information for an application in use at the sending data processing system”.</i></p>

## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
<p>accessing, by the sending data processing system, location information associated with the sending data processing system;</p>	<p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:           <ul style="list-style-type: none"> <li>• UUID (16 bytes value, which can uniquely identify an organization)</li> <li>• Major number (2 bytes value, which can identify a unique store of the organization)</li> <li>• Minor number (2 bytes value, which can identify a particular product or section)</li> </ul> </li> </ul> <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p> <p><i>The Major and/or Minor fields constitute the "location information associated with the sending data processing system".</i></p>

## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
<p>accessing, by the sending data processing system, reference information for further describing the location information associated with the sending data processing system;</p>	<p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:           <ul style="list-style-type: none"> <li>• UUID (16 bytes value, which can uniquely identify an organization)</li> <li>• Major number (2 bytes value, which can identify a unique store of the organization)</li> <li>• Minor number (2 bytes value, which can identify a particular product or section)</li> </ul> </li> </ul> <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p>  <pre> graph TD     IB[31B] --- IP[iBeacon Prefix 9Bytes]     IB --- UUID[16Bytes]     IB --- MN[Major Number 2Bytes]     IB --- MN[Minor Number 2Bytes]     IB --- TXP[TX Power 1Byte]     IP --- AF[Adv Flags 3B (0x020106)]     IP --- AH[Adv Header 2B (0x1AFF)]     IP --- CI[Company ID 2B (0x004C)]     IP --- IT[Beacon Type 1B (0x02)]     IP --- IL[Beacon Length 1B (0x15)]   </pre> <p><a href="https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/">https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</a></p> <p><i>The TX Power constitutes the "reference information for further describing the location information associated with the sending data processing system".</i></p>

## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
<p>preparing, by the sending data processing system, a broadcast unidirectional wireless data record including:</p> <p>the identity information for describing the originator identity associated with the sending data processing system,</p> <p>the application information for the application in use at the sending data processing system,</p> <p>the location information associated with the sending data processing system, and</p> <p>the reference information for further describing the location information associated with the sending data processing system;</p> <p>maintaining, by the sending data processing system, a configuration for when to perform beaconing of the broadcast unidirectional</p>	<p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:           <ul style="list-style-type: none"> <li>• UUID (16 bytes value, which can uniquely identify an organization)</li> <li>• Major number (2 bytes value, which can identify a unique store of the organization)</li> <li>• Minor number (2 bytes value, which can identify a particular product or section)</li> </ul> </li> </ul> <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p> <p>The iBeacon Prefix contains the hex data : 0x0201061AFF004C0215. This breaks down as follows:</p> <ul style="list-style-type: none"> <li>• 0x020106 defines the advertising packet as BLE General Discoverable and BR/EDR high-speed incompatible. Effectively it says this is only broadcasting, not connecting.</li> <li>• 0x1AFF says the following data is 26 bytes long and is Manufacturer Specific Data.</li> <li>• 0x004C is Apple's Bluetooth Sig ID and is the part of this spec that makes it Apple-dependent.</li> <li>• 0x02 is a secondary ID that denotes a proximity beacon, which is used by all iBeacons.</li> <li>• 0x15 defines the remaining length to be 21 bytes (16+2+2+1).</li> </ul> <p><a href="https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/">https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</a></p>

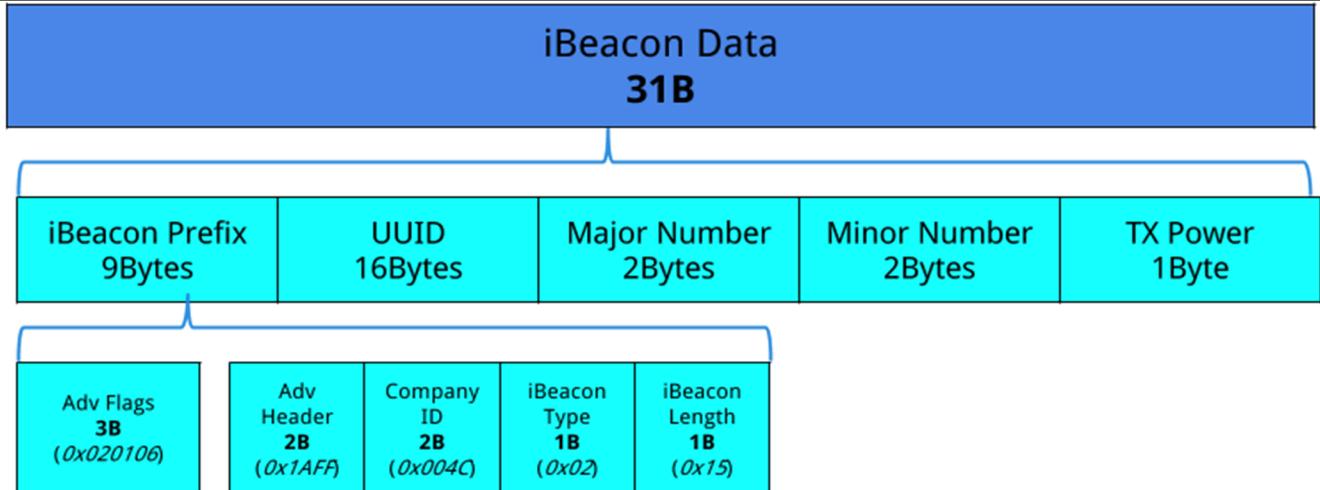
## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
wireless data record; and	
<p>transmitting, by the sending data processing system, the broadcast unidirectional wireless data record</p> <p>for receipt by a plurality of receiving mobile data processing systems</p> <p>in a wireless vicinity of the sending data processing system wherein</p>	<p><b>Managing BLE Beacons in Cisco Wave 2 and 802.11ax Access Points</b></p> <p>The BLE Management feature supports both sending of beacons and listening to beacons from small battery-powered devices.</p> <p>BLE beacons support the following profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon profile</li> <li>• Eddystone-URL profile</li> <li>• Eddystone-UID profile</li> <li>• viBeacon (contains up to 5 iBeacons internally)</li> </ul> <p>Bluetooth-enabled smartphones that are nearby can pick up the transmission from beacons and communicate with the back-end server to push advertisements or other information. The transmission power range is from -21 dBm to +5 dBm in increments of 3 dB. You can also configure the broadcast frequency in the range of 100 milliseconds to 10000 milliseconds.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p> <p>The iBeacon Prefix contains the hex data : 0x0201061AFF004C0215. This breaks down as follows:</p> <ul style="list-style-type: none"> <li>• 0x020106 defines the advertising packet as BLE General Discoverable and BR/EDR high-speed incompatible. Effectively it says this is only broadcasting, not connecting.</li> <li>• 0x1AFF says the following data is 26 bytes long and is Manufacturer Specific Data.</li> <li>• 0x004C is Apple's Bluetooth Sig ID and is the part of this spec that makes it Apple-dependent.</li> <li>• 0x02 is a secondary ID that denotes a proximity beacon, which is used by all iBeacons.</li> <li>• 0x15 defines the remaining length to be 21 bytes (16+2+2+1).</li> </ul> <p><a href="https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/">https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</a></p>

## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points
<p>the broadcast unidirectional wireless data record is beacons by the sending data processing system in accordance with the configuration for when to perform beaconing,</p>	<p><b>Managing BLE Beacons in Cisco Wave 2 and 802.11ax Access Points</b></p> <p>The BLE Management feature supports both sending of beacons and listening to beacons from small battery-powered devices.</p> <p>BLE beacons support the following profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon profile</li> <li>• Eddystone-URL profile</li> <li>• Eddystone-UID profile</li> <li>• viBeacon (contains up to 5 iBeacons internally)</li> </ul> <p>Bluetooth-enabled smartphones that are nearby can pick up the transmission from beacons and communicate with the back-end server to push advertisements or other information. The transmission power range is from -21 dBm to +5 dBm in increments of 3 dB. You can also configure the broadcast frequency in the range of 100 milliseconds to 10000 milliseconds.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p>
<p>and wherein the broadcast unidirectional wireless data record includes at least:</p> <p>the identity information for describing the originator identity associated with the sending data processing system wherein the identity information is for an alert determined by each receiving mobile data processing system of the plurality of receiving mobile data processing systems that each</p>	<p>The AP's BLE firmware supports the following beaconing profiles:</p> <ul style="list-style-type: none"> <li>• iBeacon: This is Apple's iBeacon broadcast format. In this profile, you can configure the following broadcast data:           <ul style="list-style-type: none"> <li>• UUID (16 bytes value, which can uniquely identify an organization)</li> <li>• Major number (2 bytes value, which can identify a unique store of the organization)</li> <li>• Minor number (2 bytes value, which can identify a particular product or section)</li> </ul> </li> </ul> <p>Typical use cases are iOS or Android apps that use Major, Minor, or UUID to show local store data to smartphone user, when they walk close to a Cisco Wave 2 or Catalyst AP.</p> <p><a href="https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html">https://www.cisco.com/c/en/us/td/docs/wireless/controller/9800/16-12/config-guide/b_wl_16_12_cg/ble-beacon.html</a></p>

## United States Patent No. 8,761,804 (Cisco)

US Patent No. 8,761,804	CiscoWave 2 Access Points										
<p>receiving mobile data processing system is in the wireless vicinity of the sending data processing system, the location information associated with the sending data processing system to be used by the each receiving mobile data processing system for determining their own location relative to the location information, and the reference information for further describing the location information associated with the sending data processing system for describing to the each receiving mobile data processing system useful information associated with the sending data processing system.</p>	 <p>iBeacon Data 31B</p> <table border="1"> <tr> <td>iBeacon Prefix 9Bytes</td> <td>UUID 16Bytes</td> <td>Major Number 2Bytes</td> <td>Minor Number 2Bytes</td> <td>TX Power 1Byte</td> </tr> </table> <table border="1"> <tr> <td>Adv Flags <b>3B</b> (0x020106)</td> <td>Adv Header <b>2B</b> (0x1AFF)</td> <td>Company ID <b>2B</b> (0x004C)</td> <td>iBeacon Type <b>1B</b> (0x02)</td> <td>iBeacon Length <b>1B</b> (0x15)</td> </tr> </table> <p><a href="https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/">https://os.mbed.com/blog/entry/BLE-Beacons-URIBeacon-AltBeacons-iBeacon/</a></p>	iBeacon Prefix 9Bytes	UUID 16Bytes	Major Number 2Bytes	Minor Number 2Bytes	TX Power 1Byte	Adv Flags <b>3B</b> (0x020106)	Adv Header <b>2B</b> (0x1AFF)	Company ID <b>2B</b> (0x004C)	iBeacon Type <b>1B</b> (0x02)	iBeacon Length <b>1B</b> (0x15)
iBeacon Prefix 9Bytes	UUID 16Bytes	Major Number 2Bytes	Minor Number 2Bytes	TX Power 1Byte							
Adv Flags <b>3B</b> (0x020106)	Adv Header <b>2B</b> (0x1AFF)	Company ID <b>2B</b> (0x004C)	iBeacon Type <b>1B</b> (0x02)	iBeacon Length <b>1B</b> (0x15)							